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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/694,624	10/27/2003	Philip L. Cole	COPL:002US	2611

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EXAMINER

GREENE, DANIEL LAWSON

ART UNIT	PAPER NUMBER
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3663

DATE MAILED: 02/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/694,624	COLE, PHILIP L.	
	Examiner	Art Unit	
	Daniel L. Greene Jr.	3663	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 November 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) 4, 5 and 10-27 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 6-9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 October 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input checked="" type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>1/16/04</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restriction

1. Applicant in the 11/21/2005 response elected:

Invention I, and

Species b (NOT tunable)

Applicant in said response stated that claims 1-3 and 6-9 read on the elected species, accordingly claims 4, 5, and 10-27 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention/species, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 11/21/2005.

Drawings

2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: 430. Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner,

the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

3. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the histogram of the signal, as set forth in claim 9, must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. **The specification is objected to under 35 U.S.C. 112, first paragraph, as failing to provide an adequate written description of the invention and as failing to adequately teach how to make and/or use the invention, i.e. failing to provide an enabling disclosure.**

- a. As presently set forth,
- 1.) the PPADs (135) (200),
 - 2.) the Scintillator paddles (telescopes) (140) and (150),
 - 3.) the converter (145),
 - 4.) the data acquisition and processing system (500) including all of the internals thereof, shown in, for example, Figure 5, and
 - 5.) the computer program required to perform all of the limitations claimed within the specification to allow for identifying a material,
- are essentially black boxes with no description of the internals thereof.

The disclosure is thus insufficient in failing to set forth in an adequate and sufficient fashion, a description of the internals of the each and every item listed which would enable the device to perform all of the functions, etc. that are disclosed and claimed. If applicant is of the opinion that there is a description in the prior art (in the form of literature, etc. having a date prior to the filing date of

this application), of the internals of each of the items listed which can accomplish the disclosed and claimed functions, etc., copies of said literature, etc., must be submitted for appropriate review by the Office. See *In re Ghiron et al.*, 169 USPQ 723, 727.

b. There is no adequate description or enabling disclosure of how and in what manner different materials are used to tune the PPAD 200 to a corresponding range of energies to allow detection of materials of varying atomic numbers. It is not seen where it is set forth how and in what manner one would select such materials to accomplish such, hence the disclosure is insufficient and non-enabling.

c. There is no adequate description or enabling disclosure of how and in what manner any material is actually identified. The specification is replete with assertions and generalities that do not clearly set forth how and in what manner the invention is actually capable of performing the claimed limitations, for example, on page 14, lines 3-5 "The three measurements may be combined to create...a histogram or an energy distribution graph", however it is not seen wherein an example of "data acquisition software" or a computer capable of running such software and performing such computations is set forth, hence the disclosure is insufficient and non-enabling.

d. There is no adequate description or enabling disclosure of how and in what manner the scintillator paddles may be a telescopic array as per line 11 on page 8 of the specification. It is not seen wherein an operative embodiment of

the specific scintillator paddle arrangement is set forth, hence the disclosure is insufficient and non-enabling.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 1-3 and 6-9 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention for the reasons set forth in section 5 above.

7. Claims 1-3 and 6-9 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly

connected, to make and/or use the invention for the reasons set forth in section 5 above.

8. Claims rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

a. Claim 1 is vague, indefinite and incomplete in what all is meant by and encompassed by the phrase “an emerging photon beam” because the claim fails to disclose where the beam is emerging from, hence the metes and bounds of the claim are undefined.

b. Claim 1 is vague, indefinite and incomplete in what all is meant by and encompassed by the limitation “different” because the term does not connote exactly how the ranges are different, that is, whether the ranges are different from each other or different in some other way. Accordingly the metes and bounds of the claim are undefined.

c. Claim 1 is vague, indefinite and incomplete in what all is meant by and encompassed by the limitation “ranges”. The limitation does not connote any particular “range” per se, nor whether the ranges overlap, etc., hence the metes and bounds of the claim are undefined as one would not know the “range” applicant is seeking protection for.

d. Claim 2 is vague, indefinite and incomplete in what all is meant by and encompassed by the phrase “detecting the material”. It is not clear what all is

meant and encompassed by the limitation “detecting” as in how is such determined, decided, shown, etc. , that is the limitation “detecting” does not connote any particular method, action, etc., hence the metes and bounds of the claim are undefined.

e. Claims 3, 6, and 7 are vague, indefinite and incomplete in what all is meant by and encompassed by the phrase “a photon beam energy” because the limitation “a photon beam” does not connote any particular photon beam, per se. It does not appear that the emerging photon beam is the only beam that would be detected, as presumably, a detector will detect any radiation incident upon it that it is sensitive to, hence the metes and bounds of the claim are undefined.

f. Claim 9 is vague, indefinite and incomplete in what all is meant by and encompassed by the limitation “the signal” because there are multiple signals, hence the metes and bounds of the claim are undefined.

g. There is no proper antecedent basis for all terms present. See for example “the signal” in claim 9, etc.

h. Claim 3 is vague, indefinite and incomplete in what all is meant by and encompassed by the phrase “about 10 to 20 MeV” because the limitation “10” does not have a unit of measure and the limitation “about” does not connote any particular range of what exactly is “about” 10, i.e. anything above 5 can be rounded up to 10, 7 is about 10 when compared to 1, etc., hence the metes and bounds of the claim are undefined.

9. Claims 1-3 and 6-9 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential steps, such omission amounting to a gap between the steps. See MPEP § 2172.01.

The omitted steps are those required for the identification of the material.

Claim 1 only casts and detects a photon beam without any further steps to allow for the identification of the material under interrogation. The dependant claims fail to overcome the omitted steps of claim 1.

Claim Rejections - 35 USC § 102 and 35 USC § 103

10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claims 1-3, and 6-9 are rejected under 35 U.S.C. 102(b) as anticipated by “Associated Particle Sealed Tube Neutron probe for characterization of materials” by Rhodes et al. or, in the alternative, under 35 U.S.C. 103(a) as

obvious over Rhodes et al. in view of either U.S. Patent 5,742,660 to Majewski et al. or U.S. Patent 6,195,413 to Geus et al.

Rhodes, discloses applicant's inventive concept of identifying an unknown material within a container (claim 2) by utilizing an incident photon beam and detecting emerging radiation with various detectors in, for example, section 4.2 FNTI and GRTI systems, beginning on page 294 (see specifically the second paragraph of said section 4.2), the first three paragraphs on page 296 (dual energy x-ray system), figures 1, 6-10 (claim 9), 14 and 15, etc.

Rhodes also teaches in the second paragraph of page 296 that "more effective surveillance of explosives...would result from integration of different types of sensors and detection methods..."

Both Geus et al. and Majewski teach is old and well known to utilize a method of using two detectors sensitive to different energy levels (high and low), in for example, Majewski (column 1 lines 59+) Geus et al. (column 1 lines 19-20).

If applicant is of the opinion that Rhodes does not disclose detectors sensitive to different energy levels, then it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the use of various detectors with various sensitivities including those claimed as such is no more in the use of common detector schemes/sensitivities/etc. well known in the art.

13. Claims 1-3 and 6-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over “Commercial systems for the direct detection of Explosives” by Bruschini in view of either U.S. Patent 5,742,660 to Majewski et al. or U.S. Patent 6,195,413 to Geus et al.

Bruschini discloses applicant's inventive concept of identifying an unknown material within a container (claim 2) by utilizing an incident photon beam and detecting emerging radiation with various detectors in, for example, Figure 1 on page 11 of 70, section 2.1 on page 12 of 70, the first full paragraph on page 17 of 70, etc.

Both Geus et al. and Majewski teach is old and well known to utilize a method of using two detectors sensitive to different energy levels (high and low), in for example, Majewski (column 1 lines 59+) Geus et al. (column 1 lines 19-20).

If applicant is of the opinion that Bruschini does not disclose detectors sensitive to different energy levels, then it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the use of various detectors with various sensitivities including those claimed as such is no more in the use of common detector schemes/sensitivities/etc. well known in the art.

Conclusion

14. Examiner's Note: Examiner has cited particular columns and line numbers in the references as applied to the claims for the convenience of the applicant. Although the specified citations are representative of the teachings in the art and are applied to the

specific limitations within the individual claim, other passages and figures may apply as well. It is respectfully requested from the applicant, in preparing the responses, to fully consider the references in entirety as potentially teaching all or part of the claimed invention, as well as the context of the passage as taught by the prior art or disclosed by the examiner.

15. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel L. Greene Jr. whose telephone number is (571) 272-6876. The examiner can normally be reached on Mon-Fri 8:30am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jack Keith can be reached on (571) 272-6878. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

17. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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JACK KEITH
SUPERVISORY PATENT EXAMINER